Reconstituting Retroviral Vector (ReCon Vector) for Targeted Gene Expression

ABSTRACT OF THE DISCLOSURE

The present invention relates to a retroviral vector which is especially applicable as a safe gene transfer vehicle for targeted gene therapy. Said retroviral vector comprises one or more promoters inserted in antisense orientation within the 5' LTR region and one or more coding sequences inserted in antisense orientation within the 3' LTR region. Both, the promoter as well as the coding sequence, are additionally inserted in such a way as to ensure that the promoter and the coding sequence become duplicated during the process of reverse transcription in a target cell and thus appear in the 3' as well as in the 5' LTR region of the resulting provirus in a fashion where the promoter is located upstream of the coding sequence allowing it to drive gene expression. This system avoids any leakiness of gene expression in the packaging cells, and allows expression of transferred genes in the target cell without the necessity for external stimuli.